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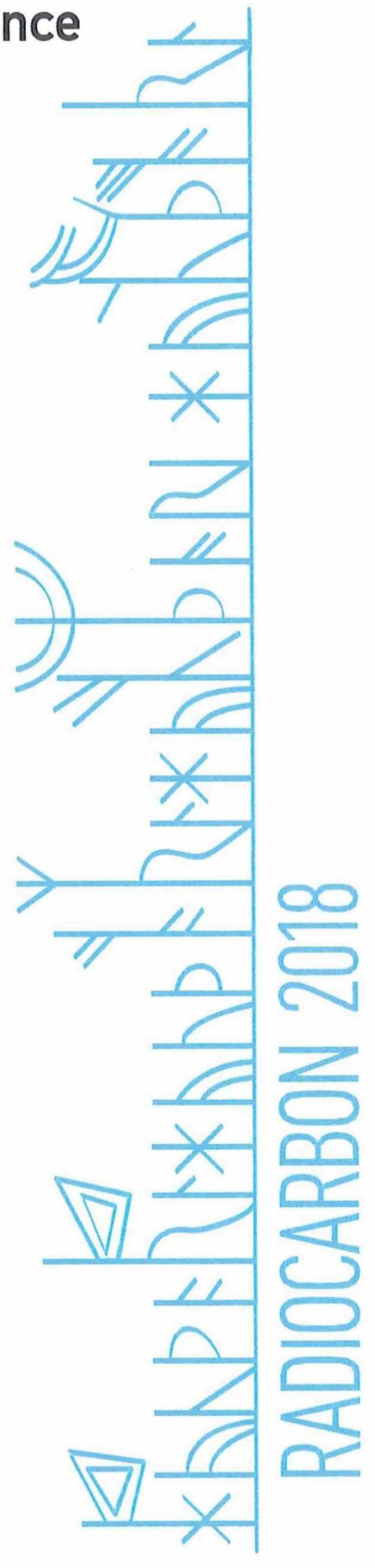

4A-02 ^{14}C-dating of wooden buildings in Belgium. A problem of reliability?

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From the prehistory until the 19th-early 20th century wood was the most important construction material for buildings in Belgium and in the adjoining regions. With the exception of some waterlogged areas, such as the so-called Dutch river area for example in the center of the Netherlands, the wooden posts of the structures are not preserved anymore. The only remains are a discoloration in the soil where once the wooden posts have been erected. Because of this, these buildings are difficult to date. Material finds in postholes, which can help to date the structure, are mostly limited to only a few sherds, remnants of human garbage on the site. Although in some periods, as for example the Roman era, the chance of ceramic finds in postholes is higher than in the pre- and protohistory.

Charcoal or charred grains preserved in these postholes are a dating option, although the origin of these materials is not clear. They can have been deposited in the postholes in different ways and in different periods during the lifespan of the building. So, archaeologists are confronted by a question of the reliability of the charcoal to be dated, which is an important matter. However, in many cases this is the only material to get an absolute date for the studied structures.

To tackle this problem of reliability, a strategy is to date several samples from the postholes of the same structure. A pattern of contemporaneous ^{14}C-data will give us insight in the age of these structures and outliers can be eliminated. To verify the results of the ^{14}C-dating a comparison is made with the fragments of material culture, mostly ceramics that were recorded in the infill of the postholes to control if the can be dated in the same time span. If possible, the dated structure is also compared with typologically related buildings to establish a chronological framework. This method has resulted in the recognition and dating of buildings types during protohistory and in the Roman period in Belgium and the adjoining regions.

~~4A-03 Radiocarbon distribution in the North Atlantic from GEOVIDE cruise in May-June 2014 and its comparison with historic data sets.~~

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~~Atlantic Meridional Overturning Circulation (AMOC) plays an important role in the Earth's climate system with its impact on sea surface temperature, sea-ice, marine ecosystems, the ocean carbon budget and global sea levels. The ongoing GEOVIDE project, an international collaborative program, aims to better understand and quantify AMOC and disentangle the uncertainties on water masses, heat fluxes and Trace Element and Isotope (TEI) cycles in the North Atlantic and Labrador Sea. To achieve these objectives, an oceanographic mission (GEOVIDE cruise) was carried out in the subpolar North Atlantic along the OVIDE section and across the Labrador Sea on board RV "Pourquoi Pas?" in May-June 2014. Physical, chemical and biological variables were measured on the two sections to produce a synoptic of the distribution of relevant physical and biogeochemical properties.~~

~~We report here radiocarbon measurements of dissolved inorganic carbon (DIC) in seawater samples collected from nine stations (seven stations along the OVIDE section and two stations in the Labrador Sea). The comparison of the radiocarbon distribution obtained during this campaign and previous data (GEOSECS, WOCE) allows to investigate spatio-temporal variability of radiocarbon (Delta^{14}C and ^{14}C age) over the last fifty years in the North Atlantic. We discuss in detail the causes of this ^{14}C variability in response to the uptake of bomb ^{14}C and changes in water masses circulation.~~